

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-9. (cancelled)

10. (currently amended) A method for increasing the size of starch grains and the starch content of a plant or of a plant part, comprising the step of essentially preventing the expression of starch phosphorylase or inactivating starch phosphorylase ~~switching off the gene coding for starch phosphorylase~~ by introducing a mutation in the genome of said plant to ~~reduce~~ essentially abolish the activity of starch phosphorylase in said plant, thereby increasing the size of starch grains and the starch content of said plant or said plant part, wherein the step of introducing a mutation is performed by inserting nucleotide(s) in the gene coding for the endogenous starch phosphorylase.

11. (currently amended) A method for obtaining plants or plant parts that produce starch grains of increased size and with higher starch content, said method comprising essentially preventing the expression of starch phosphorylase or inactivating starch phosphorylase ~~switching off a gene of a starch~~

~~phosphorylase~~ in cells of the plant by introducing a mutation in the genome of said plant, wherein the step of introducing a mutation is performed by inserting nucleotide(s) in the gene coding for the endogenous starch phosphorylase.

12.(currently amended) The method according to Claim 11, further comprising the step of regenerating the plant from the transformed cell, said transgenic plant thus obtained having starch grains of increased size, ~~and/or~~ and a higher starch content.

13. (previously presented) The method according to claim 10, wherein the plant is potato, broad bean, beet, spinach, pea, wheat, maize or rice.

14-18. (cancelled)

19. (previously presented) The method according to claim 11, wherein the plant is potato, broad bean, beet, spinach, pea, wheat, maize or rice.

20-21. (cancelled)

22. (previously presented) The method according to claim 10, wherein the step of introducing a mutation is performed by insertion of T-DNA or by insertion of transposons.

23. (previously presented) The method according to claim 11, wherein the step of introducing a mutation is performed by insertion of T-DNA or by insertion of transposons.

24. (previously presented) The method according to claim 10, wherein the introduction of a mutation is performed by transferring vectors into the protoplasts, by electroporation, by using a gene gun, or by cytoplasmic or nuclear micro-injection.

25. (previously presented) The method according to claim 11, wherein the introduction of a mutation is performed by transferring vectors into the protoplasts, by electroporation, by using a gene gun, or by cytoplasmic or nuclear micro-injection.

26. (currently amended) A method for increasing the size of starch grains and the starch content of a plant or of a plant part, comprising the steps of:

a) essentially preventing the expression of starch phosphorylase or inactivating starch phosphorylase ~~switching off a gene coding for starch phosphorylase~~ in a plant cell by introducing a mutation; and

b) regenerating the plant from the transformed cell,  
said transgenic plant thus obtained having starch  
grains of increased size and a higher starch content;

wherein said mutation in step a) includes the insertion  
of nucleotides in the gene coding for starch phosphorylase.

27. (cancelled)

28. (previously presented) The method according to  
claim 26, wherein the introduction of a mutation in step a) is  
performed by transferring vectors into the protoplasts, by  
electroporation, by using a gene gun, or by cytoplasmic or  
nuclear micro-injection.

29. (previously presented) The method according to  
claim 26, wherein the plant is potato, broad bean, beet, spinach,  
pea, wheat, maize or rice.

30. (previously presented) A method for producing  
starch comprising the steps of:

a) obtaining plants or plant parts that produce starch  
grains of increased size and with higher starch content as  
defined in claim 11; and

b) extracting starch from said plants or plant parts  
obtained in step a).

31. (new) A method for increasing the size of starch grains and the starch content of a plant or of a plant part, comprising the step of:

essentially preventing the expression of starch phosphorylase or inactivating starch phosphorylase by introducing a mutation in the genome of said plant to essentially abolish the activity of starch phosphorylase in said plant, thereby increasing the size of starch grains and the starch content of said plant or said plant part, wherein the step of introducing a mutation is performed by inserting T-DNA in the gene coding for the endogenous starch phosphorylase.

32. (new) A method for obtaining plants or plant parts that produce starch grains of increased size and with higher starch content, said method comprising essentially preventing the expression of starch phosphorylase or inactivating starch phosphorylase in cells of the plant by introducing a mutation in the genome of said plant, wherein the step of introducing a mutation is performed by inserting T-DNA in the gene coding for the endogenous starch phosphorylase.

33. (new) A method for increasing the size of starch grains and the starch content of a plant or of a plant part, comprising the steps of:

a) essentially preventing the expression of starch phosphorylase or inactivating starch phosphorylase in a plant cell by introducing a mutation; and

b) regenerating the plant from the transformed cell, said transgenic plant thus obtained having starch grains of increased size and a higher starch content,

wherein said mutation in step a) includes the insertion of T-DNA in the gene coding for starch phosphorylase.

34. (new) A method for producing starch comprising the steps of:

a) obtaining plants or plant parts that produce starch grains of increased size and with higher starch content as defined in claim 32; and

b) extracting starch from said plants or plant parts obtained in step a).